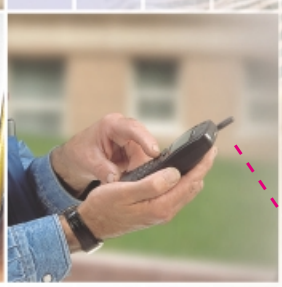
OUMAN EH-200 SERIES

GSM-controlled
heating regulator



LONWORKS®

OUMAN®

Ouman is number 1.

An uncompromising effort to develop an easy to use and precise regulator has put Ouman products on the road to success. Successful products have been created through an awareness of client needs and knowledge of regulator technology, combined with the newest technology and modern design. Our products increase living comfort and security, and help save the environment by conserving energy. In addition to top-quality products, Ouman Finland Oy's strengths include customer service, quick delivery time and reasonable prices.

According to a business image analysis done by the Economic Recearch Centre, Ouman Finland represents the best in its branch of industry. Ouman placed 1st in the INNOSUOMI provincial competition for the year 2000. Our new, modern factory in Kempele will allow for the continuation of stable development.

Ouman Finland Oy is one of the strong, highly technological, growing companies in Finland. It is also highly credible. Ouman Finland has received the highest AAA credit rating that has been given to only a small percentage of Finnish companies.

Further information: www.ouman.fi

OUMAN®

OUMAN EH-200

Intelligent heating regulator

Ouman EH-200 is a new generation heating regulator whose versatility, intelligence and clarity have made it the favourite regulator for hot water heating systems. From the beginning, user friendliness has been one factor in making Ouman EH-200 a success; it has an instructive display, a voice box and now **GSM text messages.**

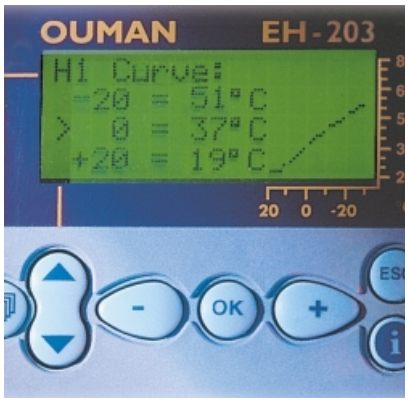
A heating regulator controlled by a mobile phone

The new GSM control-feature raises facility automation to a whole new level. In addition to heating regulation, the regulator has numerous control and alarm functions for facility technical systems that are now easy and inexpensive to control using a mobile phone.

A logical user interface

The Ouman EH-200 menus have been made so understandable that in a normal situation the user can get along without a user manual. The user can select the desired language for the menu.

Displays a true characteristic heating curve



Unlike other traditional regulators, EH-200 assists its user by displaying a characteristic heating curve that is according to the settings. The automatically curving characteristic heating curve changes in real time when the user sets the supply water temperature set values according to different outdoor temperatures (set values for outdoor temperatures of -20°, 0°C, and +20°C).

Prevents user errors

If necessary, the regulator automatically makes an adjustment if the user sets an unusual curve. This prevents typical user errors, which are often the reason for temperature systems not functioning in a desirable manner.

Instructs orally or with a displayed text

The Ouman EH-200 regulator has a unique information function. You can obtain additional information and precise instructions either orally (pat. pend.) or from the clear text display. The voice box (optional equipment) is easy to plug in to every EH-200 series regulator.

Easy to use

Hint! *Make it easy for your customers to learn how to use the installed regulator! Lend a voice box to your customers and let them learn the finer points of the regulator at their own pace. The regulator will speak for itself.*

Unique supply water information

The supply water information is in the form of a table that informs its user of the factors that effect the supply water temperature at that moment. The supply water information also makes it easy to detect faulty settings. If, for example, the supply water temperature is too high even though the curve has been set correctly, the user can see from the supply water information that the minimum limit is too high.

H1 Supply temp	°C
>Follow curve	45
Outdoor delay	-2
Reduced temp	0
Max lim.eff.	0
Min lim.eff.	12
Result	=55

The autumn drying function

The autumn drying function raises the supply water temperature for a certain period of time in the autumn. This decreases building dampness so it doesn't feel as chilly as it often does at the end of the summer. As a result, the residents in the buildings are satisfied.

A clear user manua

An excellent, illustrated user manual comes with the regulator that also includes an installation and maintenar guide for maintenance persons authorised by Ouman.

Comment from an HVAC designer:

"An easy-to-use, top quality product"

In our project areas, we've often noticed that the facility heating regulators don't function properly. Usually, this is because people don't know how to use the devices correctly. The problem especially arises in those places where the planned functions are carried out with a so-called freely programmable DDC-regulator without a monitoring room connection - such as those usually found in apartments.

Another typical problem in using the aforementioned device is that adding even a small additional function often requires a technician from the device manufacturer to come to the site to make the necessary program change.

These problems have not appeared with the Ouman EH-200 series - on the contrary; the regulators are extremely simple to use. In addition, they already contain all of the typical functions related to heating regulation regardless of whether the facility is connected to district heating or uses a boiler plant or floor heating.

From our experience, the regulation precision of the EH-200 is also top-notch and with the GSM-connection, remote use and supervision are possible. Since the product is competitively priced considering its features, we dare recommend choosing EH-200 for facility heating regulation.

Ilkka Hakonen,
HVAC Design Office
Lindroos Oy
Jyväskylä

OUMAN EH-200

The world's first heating regulator controlled by a mobile phone

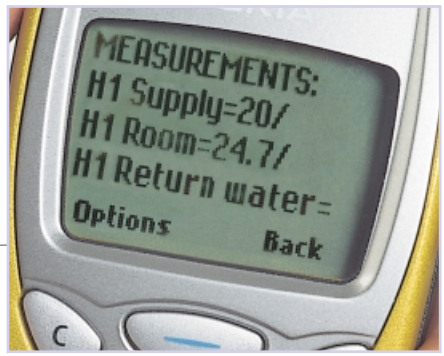
The EH-203 and EH-201/L regulators are now equipped with a GSM-modem (accessory) connection capability. The new GSM-control is a mobile solution to the modern person; you can travel freely and still keep track of matters related to your real estate. You can now monitor and remotely control facility heating inexpensively and easily with GSM text messages. Numerous other alarms and monitoring functions for facility technical systems can also be connected to an Ouman regulator, whereby messages coming into the mobile phone mean increased security and the right help quickly. You can take the GSM-function into use immediately or later, when you feel it is necessary.

Facility or home always in control - wherever you might be

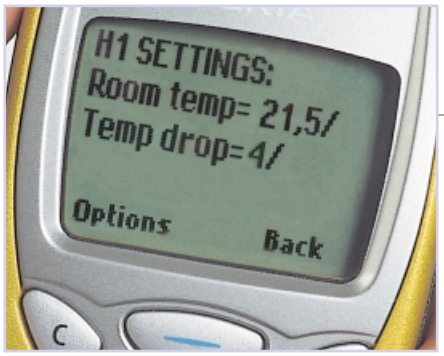
Now it is easy to control what happens in a facility with a mobile phone from wherever you may be. You don't need a user manual; when you send the text message keywords to the regulator you receive a clear list on your mobile phone. By choosing, e.g., "measurements" and sending it to the regulator, you receive **all the regulator's measurement data** (up to 11).

Using a mobile phone, you can bypass a time program and set a temperature drop for just the right time, or you can remotely control, e.g., door locks or a sauna stove.

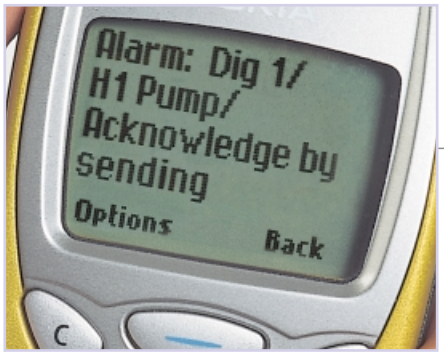
MEASURING



CONTROL



ALARM



New progressive technology

Comfort and savings with a mobile phone.

The purpose of the regulator is to ensure a steady temperature automatically. However, occasionally there are situations when it is good to check and adjust **settings** to increase comfort and savings. Now this is easy to do via GSM text messages; just change the setting in the text message you received from the regulator and send the message back. Being an intelligent regulator, Ouman only accepts adjustments that are within reasonable limits. The least expensive text message-operated GSM-control model works in all GSM phones. GSM-control is also an irreplaceable tool for maintenance workers.

PATENTED GSM CONTROL

Security of real-time

When something unusual happens, the regulator immediately sends **a clearly worded text message straight** to a GSM phone. Up to 7 alarm indicators can be connected to the Ouman regulator at the same time; e.g., burglar alarms, water damage, combustion gas temperature, etc. Ouman can also remind you that an oil tank is getting empty or that a wastewater tank is getting full. With minimal cost, you have a tool at your disposal that is versatile and trustworthy, and provides security.

A homeowner's comment:

"I wanted to be sure about my heating regulation"

I live in Oulu, in a house built in the 40's and completely remodelled in the 80's. For heating, it has a normal central hot water heater. I travel a lot because of my job. I wanted assurance that my house would stay warm while I was gone. I also wanted information about possible heating system problems before greater damage could take place.

Ouman was able to offer me a solution. I believe that the EH-203 regulator is simple and easy enough to use. The functions that I wanted were in the regulator, and I can also inexpensively switch alarm functions. I receive information about unusual situations straight into my mobile phone. I can also monitor the temperatures of my home, and even adjust them even when I am far from home. Making adjustments is easy with the familiar text messaging principle.

Kim Gussander,
Factory service head
Oulu

OUMAN EH-200

Progressive heating regulation technology

The Ouman EH-200 regulators represent new, more intelligent regulator technology. They have numerous qualities that improve regulation and save energy, and have the automatic functions that professionals have hoped for.

Regulates up to three regulating circuits

The Ouman EH-200 regulator family has a suitable regulator for all types of water circulation heating systems such as radiator heating, floor heating; for pre-warming of air in-flow, and regulation of domestic hot water.

In addition, the regulator series operates independent of the heating source, which can be district heating exchangers, boiler plants, accumulators, district heating substations and geothermal heating.

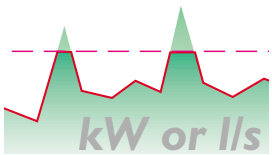
Ouman EH-200 series:

EH-203	triple circuit regulator (2 heating, 1 domestic hot water)	● ● ●
EH-201/L	single circuit heating regulator	●
EH-201/V	single circuit domestic hot water regulator	●

Takes into account differences in facilities

Thick concrete walls retain and release heat differently than light wood walls. An outdoor temperature measurement delaying function can be installed in the Ouman EH-200. During quick outdoor temperature changes, the regulator does not change the temperature of the supply water at the same pace, but instead, functions according to an average that it has measured for a longer period of time.

Intelligent energy limiting saves without compromising comfort

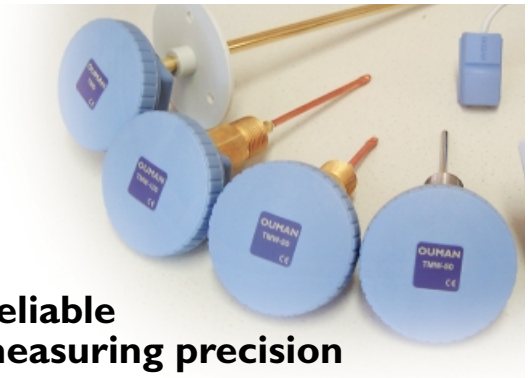


Peak energy consumption is costly for the owner of a facility. The energy consumption at the point of hook-up, which is the basis for billing, can be lowered by preventing energy consumption during periods of peak consumption from rising over a preset limit.

An energy meter can be connected to EH-200 that monitors district heat energy consumption. A peak energy limit for each facility is set into the regulator and when this limit is reached; the regulator drops the heating energy. However, a supply of domestic hot water is always insured. A short drop in energy can't be felt in the room temperature, only in the owner's pocket.

The choice of professionals

Industry professionals and equipment manufactures value Ouman's progressive technology. For example, an Ouman-200-automatic takes care of Lämpöässä's ground heating pump guidance and regulation.

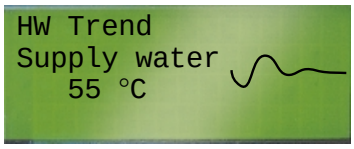


Reliable measuring precision

Ouman temperature sensors meet the recommendations of the Finnish District Heating Association.

A graphic trend display makes tuning easier

Ouman EH-200 displays trends in supply water temperature changes graphically, so the regulation process is easier to perceive. The trend display especially makes tuning easier for the installer of the regulator.

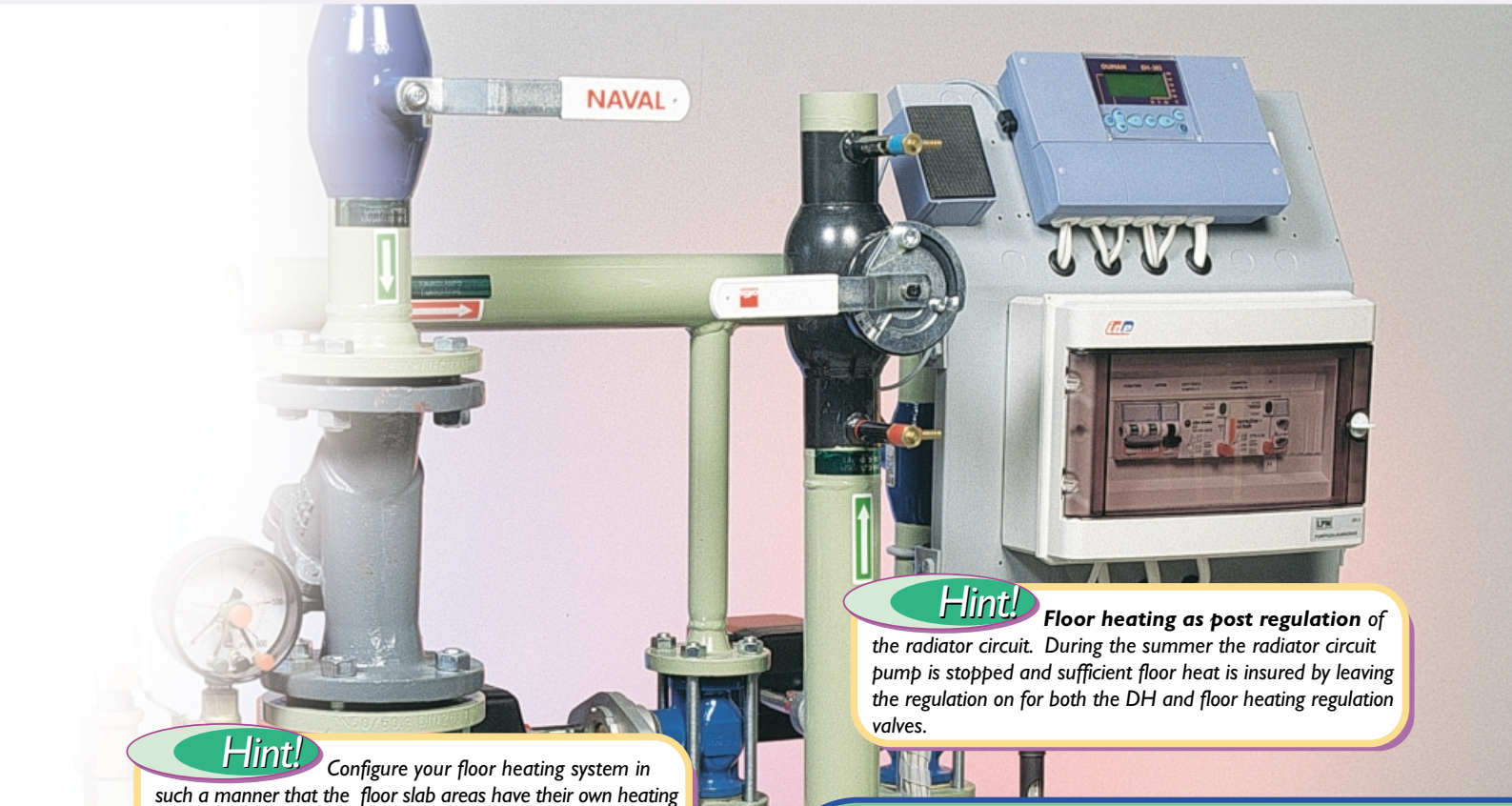


Automatic configuration

The Ouman EH-200 regulator's automatic configuration program eases and speeds up installation. The sensible factory set values are suitable for many locations. The regulator identifies connected sensors and automatically starts using the proper regulating circuits.

If, for example, the other regulating circuit's supply water sensor isn't connected, the regulator automatically leaves the other heating circuit (H2) out of all its menus.

Precision and savings



Hint! *Configure your floor heating system in such a manner that the floor slab areas have their own heating circuits. This way you can use the 2nd circuit of the EH-203 to direct a little heat to the slab areas even during the summer so that the "stone surface" doesn't feel unpleasantly cold. Moisture from wash areas can also be quickly eliminated.*

Hint! ***Floor heating as post regulation*** *of the radiator circuit. During the summer the radiator circuit pump is stopped and sufficient floor heat is insured by leaving the regulation on for both the DH and floor heating regulation valves.*

Patented domestic hot water saver strategy

Ouman Eh-200 has a highly developed domestic hot water saver algorithm, which guarantees you an enjoyable shower even under difficult regulating conditions. Anticipatory regulating and a quick run function improve regulation in situations when consumption changes quickly.
Automatic changes in the tuning values minimise regulation during a down period when there is no consumption and this lengthens the life of the valve actuator.

Comment from an HVAC automation entrepreneur:

"Pays for itself with clear savings!"

The EH-200 regulators are exceptionally easy to use. They have user instructions with the help of a voice box or text display; in other words, the device tells you how to use it. A complete and detailed manual is included with the product.

The price/quality ratio of the EH-200 series is fair. The series' regulators pay for themselves with clear energy savings. They also raise the quality of living and provide security. The EH-200 is versatile; the same regulator is suitable for different kinds of systems.

After 10 years of experience with Ouman, I can say that the right heating regulator means real savings. The devices have several different possibilities for use. As a Finnish product, regulator and technical information is given straight from the manufacturer in your own language. It is great to represent a product that I can stand behind.

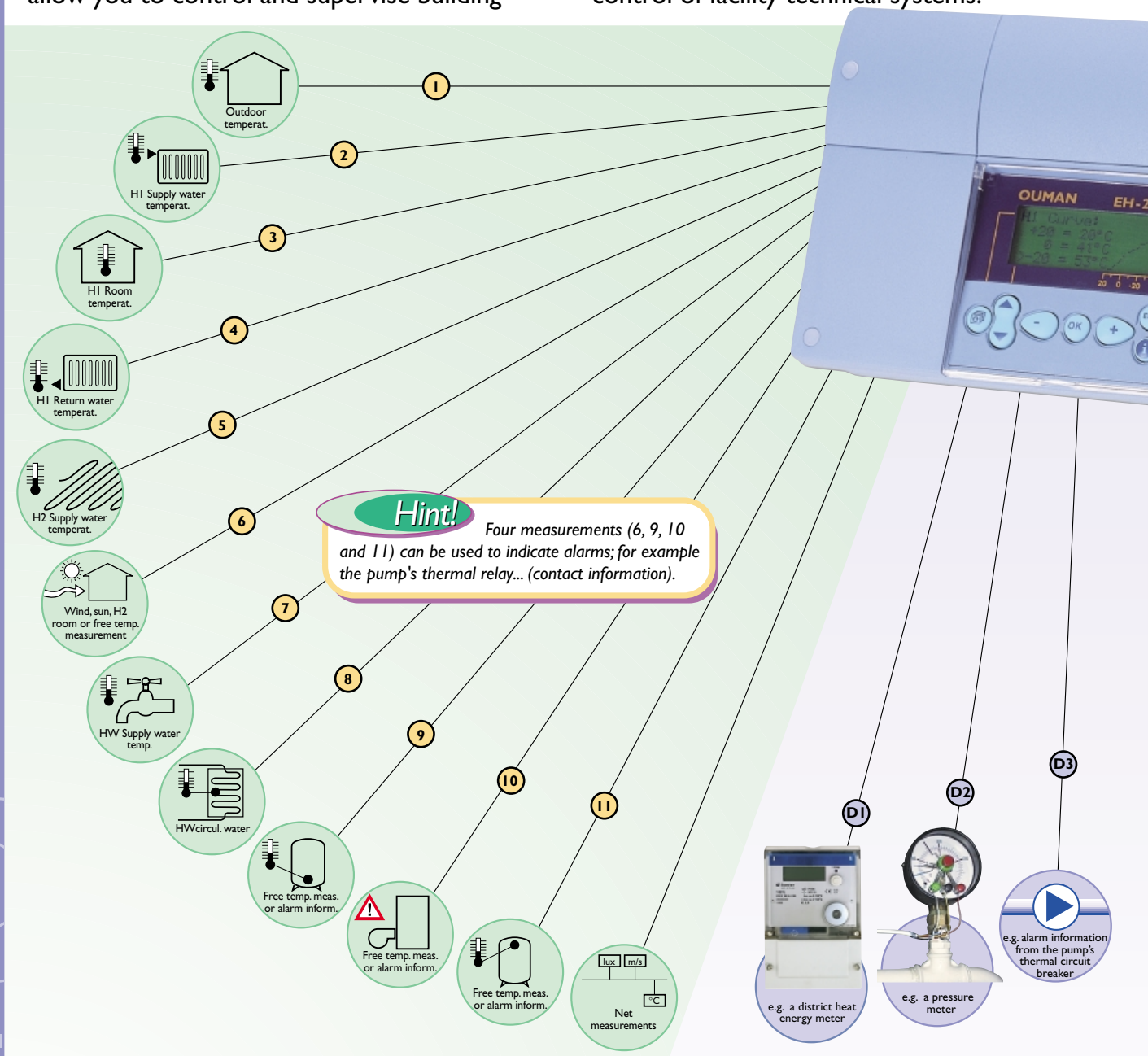
Matti Roitto
Lämpö Roitto Ky
Kuusankoski

OUMAN EH-200

More than a heating regulator

The numerous temperature measurements and valve gearings of the Ouman EH-200 make it possible to use the regulator in many different types of central water heating systems.

In addition, the EH-200 has extra features that allow you to control and supervise building technical systems in many ways. The many alarm indicator connection capabilities increase security and help daily living. Monitoring water and energy usage usually leads to savings. With the help of the regulator's relays, it is possible to automate control of facility technical systems.



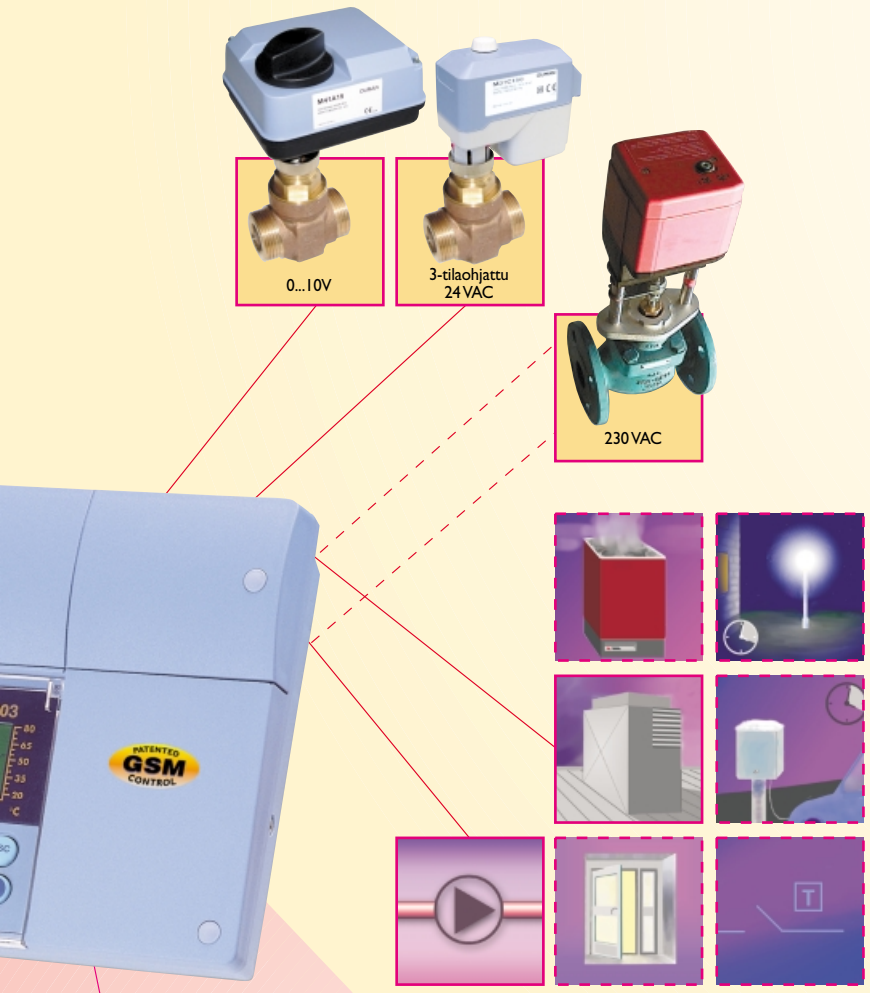
11 measurements

The Ouman EH-203 has unbelievably diverse measurement possibilities - 14 simultaneous measurement data: 11 NTC measurements and 3 digital inputs. The EH-201 models correspondingly have: 7 NTC measurements and 2 digital inputs. Measurement data can also be read from the channel with the help of a separate adapter card.

3 digital inputs

The Ouman Eh-200 has three digital inputs. Measurement, alarm, or operating functions can be connected to all of them. The regulator gets information from the digital inputs about, for example, district heat water and energy consumption, the facility's water consumption or alarm information from the pump's thermal circuit breaker.

Versatility



Versatile actuator controls

Either a 3-point controlled 24 VAC actuator or a voltage controlled (0...10 V / 2...10 V) actuator can be connected to each regulating circuit.

ATTENTION! In addition, a 230 VAC actuator can be connected to one regulating circuit if both relays are free.

Hint! *An ideal regulator for facilities under renovation, because different types of motors already in place can be connected to it. Utilise equipment that is in operation!*

2 relay control

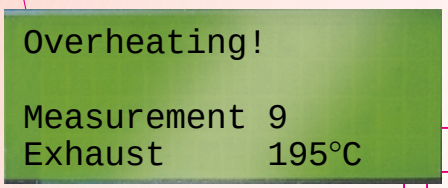
Ouman EH-200 has two standard relay outputs which can be used to control, for example, a circulation pump (pumps' summer stop), an exhaust fan, door locks, a sauna stove, outdoor lights, motor heater plug-ins etc. Thermostat operation is also possible.

Hint! *Powered roof-ventilators can be controlled with the help of the EH-200 based on timer control or outside temperature.*

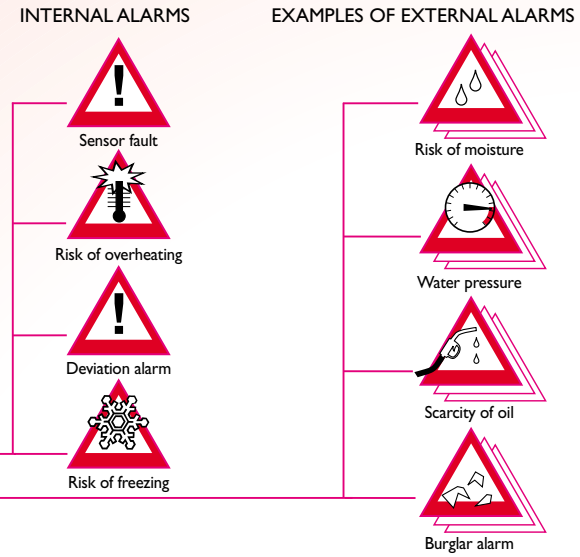
Versatile alarm functions

The Ouman EH-200 has alarms that indicate sensor faults, exit water temperatures that deviate from the set values, HW overheating, and the heating system's freezing risk. These are standard for the Ouman EH-200. The regulator can also be used to indicate external alarms through measurements 6, 9, 10, or 11 or through digital inputs. External alarms can be labelled using the text editor.

The regulator's display indicates what caused the alarm. In addition, the regulator's internal buzzer goes off.



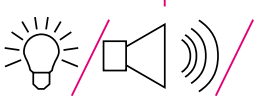
In this example, the regulator is connected to the exhaust temperature sensor (TMEXH). The rise in combustion gas temperature is a sign of boiler soot. The boiler should be swept for energy and security reasons.



Alarm transfer

In an emergency:

- Regulator can inform the customer what caused the alarm and where it occurred straight to a GSM-phone with a clearly worded text message or to an Ounet® -monitoring room.
- The regulator's collapsible contact can connect, for example, an indicator light or buzzer, or relay alarm information to the facility's alarm centre.



The facility's alarm centre reliably transfers the alarm forward.

OUMAN EH-200

For all sizes of facilities

The flexibility and accessibility of the Ouman EH-200 make it a true heating regulator for all types of facilities. It can be used in all kinds of facilities with central water heating from small buildings to large plants.

The EH-200 is open to different types of remote monitoring solutions. Facility events and consumption costs can now be monitored and controlled from the display of a GSM-phone, PC, and from the regulator. Alarm messages can be received as text messages into a GSM-phone.

OUMAN GSM CONTROL

Economical and effortless GSM-monitoring

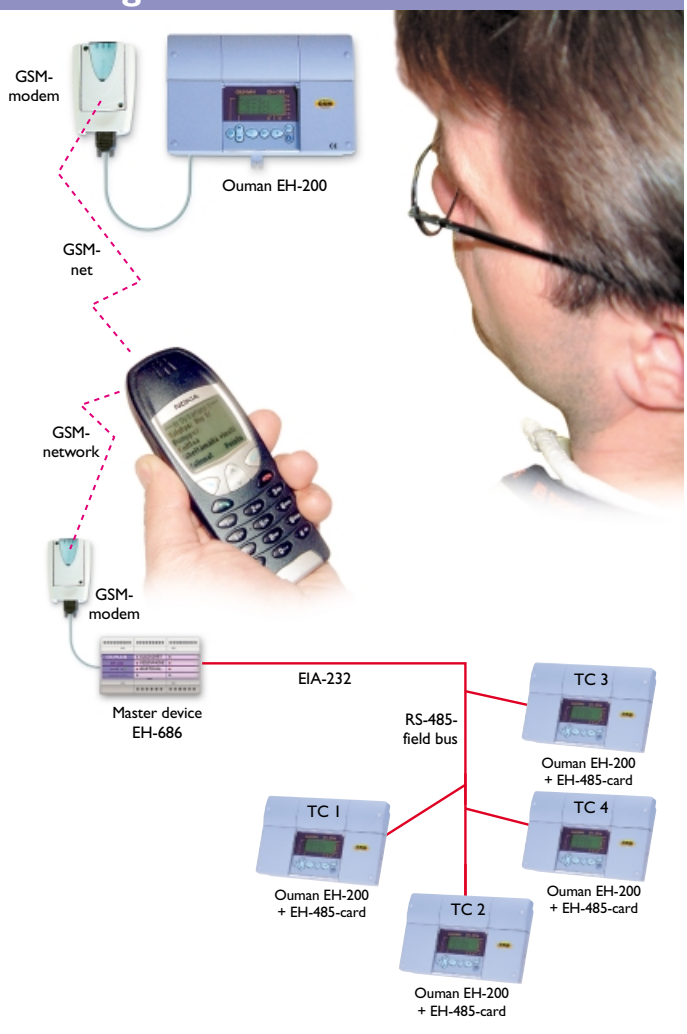
1. Connecting one EH-200 regulator to GSM-monitoring

A GSM-modem is connected straight unto the regulator. Communication with the regulator takes place with keywords. With a GSM-phone you can:

- receive and sign off on alarms from the EH-200 regulator
- read measurement information
- browse through and modify user-level desired values
- browse through and modify regulator's control method
- inspect from exit water information factors that are determining current exit water temperature
- by-pass time programmes either permanently or temporarily
- execute vent flushing

2. Connecting several EH-200 regulators to GSM-monitoring

GSM-monitoring can be done through the RS-485 field bus. Many regulators can be connected to the field bus by installing a bus adapter card unto each regulator. The GSM-modem is connected to the RS-485 field bus with the help of the EH-686 master device that direct traffic in the net. Each device connected to the channel is given its own device code (E.g. TCI). This way the system identifies which regulator the user wishes to communicate with.

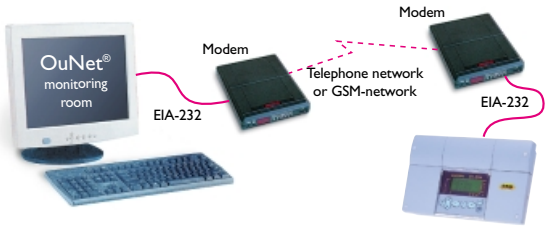


Remote control and monitoring

Managing large complexes Ouman Ounet PC-monitoring room connection

Connecting one EH-200 regulator to the monitor

The potential for hooking up to the economical OuNet monitor through a fixed connection or a modem is standard for the regulator. Maximum distance between PC and regulator on a fixed connection is 25m.

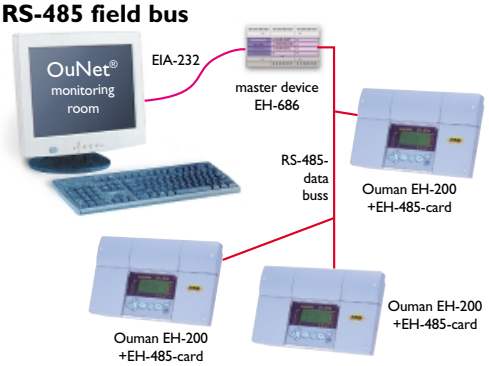


Connecting several EH-200 regulators to the monitor

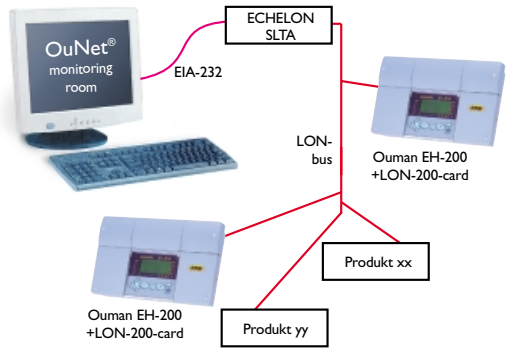
OuNet connections with several regulators can be made as a fixed connection or as a happening connection with the help of modems and using either the LON field bus or RS-485 field bus. An appropriate bus adapter card is installed unto each regulator connected to the bus. Net traffic in the RS-485 field bus is controlled with the help of the EH-686.

When the RS-485 field bus is used for the monitor connection, only Ouman-control devices can be connected to the bus. If the LON-bus is used, other devices that operate in the LON-environment can be connected in addition to Ouman's control devices.

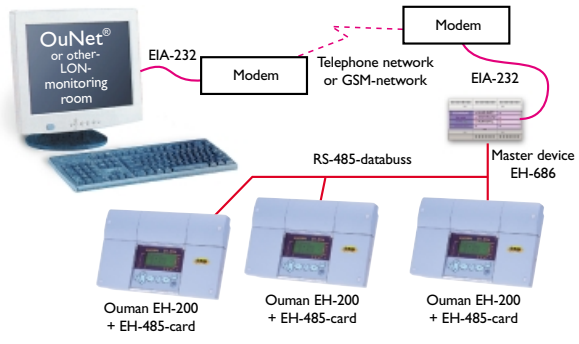
1. Fixed monitor connection: RS-485 field bus



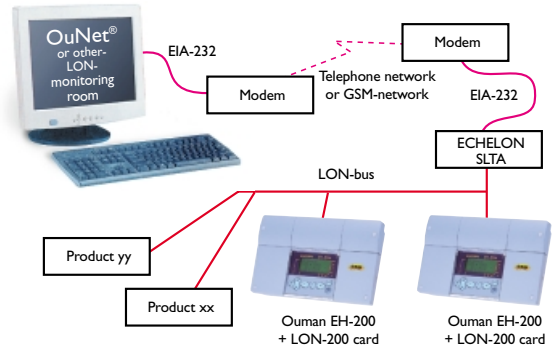
2. Fixed monitor connection: LON field bus



3. Monitor connection via modem: RS-485 field bus

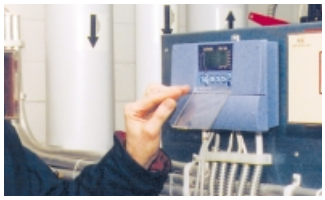


4. Monitor connection via modem: LON field bus



Comment from an apartment house manager:

"You don't need special training!"



Oulu Sivakka Oy has over 6,000 apartment rental units throughout Oulu and the number increases by an average of 200 new apartments each year. Since Oulu Sivakka Oy itself builds the facilities, it is able to guarantee a pleasant living environment in well-equipped rental apartments for its customers.

Area apartment house manager Hannu Sassali is responsible for the Oulu Sivakka Oy's real estate technical financial managers:

"I appreciate the user friendliness and clarity of the Ouman EH-200 series products. It is easy to find the primary functions in the regulators. Maintenance knows how to perform duties that require heating regulation in their areas without special training. The ratio of price/quality of the regulators is also right. The devices are extremely reliable and technical support is also easy to get.

For these reasons, Oulu Sivakka has recommended Ouman products to the HVAC designers that build and remodel Sivakka facilities."

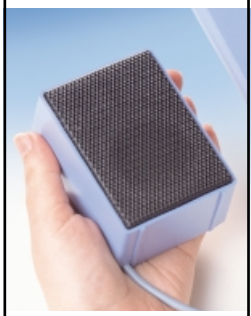
Hannu Sassali
Area apartment manager
Oulu

OUMAN EH-200 Heating regulators

TECHNICAL INFORMATION:	**OUMAN EH-203** **Triple circuit regulator** for two heating circuit and one domestic hot water circuit	**OUMAN EH-201/L** **Single circuit temperature regulator** for one heating circuit	**OUMAN EH-201/V** **Single circuit temperature regulator** for one domestic hot water circuit
Operat. voltage:	230 VAC, 50 Hz, 0,2 A		
Casing:	PC/ABS		
Protection class:	without cover seal IP 41		
Width, height, depth:	width 230 mm, height 145 mm, depth 60 mm (with spacers 65 mm)		
Weight:	1200 g	1000 g	1000 g
Cabling direct:	From above or below (turnable display and keyboard). Through holes on the bottom.		
Regulator type:	Heating circuit's PID, DHW circuit PID+exchange + quick run	PID	PID + exchange + quick run
Measurements:	11 st (NTC 10 kΩ) + 3 digital inputs	7 st (NTC 10 kΩ) + 2 digital inputs	7 st (NTC 10 kΩ) + 2 digital inputs
Clock programs	Max.7 program phases/regul.circuit (The regul.circuits have 14 all together), Max 7 program phases/ relay (begins - ends = 1 program phase)		
Digital inputs:	3 st	2 st	2 st
	The potential free contact is connected to the digital input (load 6...9VDC/ 20 mA)		
Actuator control outputs:	3 (combined output power maks. 25VA)	1 (maks. 13VA)	1 (maks. 13VA)
	3-point (24VAC) or voltage control 0...10V (2...10V)		
GSM Control readiness	yes	yes	no
Relay outputs:	1 break before make contact relay 230VAC / 6(1)A and 1 norm. open contact relay 230VAC / 6(1)A		
Alarm relay outputs:	1 st 24 VAC / 1A		
Inform. transfer connection:	EIA-232C, RS-485 or LON		
Voice box connection:	Plug in		
Operating temperature:	0 ... +50 °C		
Storing temperature:	–20 ... +70 °C		
APPROVALS:			
EMC-directive	89/336/EEC, 92/31/EEC		
-Interference toler.	EN 50082-1		
-Interf. emissions:	EN 50081-1		
Small voltage directive:	73/23/EEC		
-Safety	EN 60730-1		
Warranty:	2 years		
Manufacturer:	Ouman Finland Oy, Kempele Finland		

EH-200 SERIES ACCESSORIES

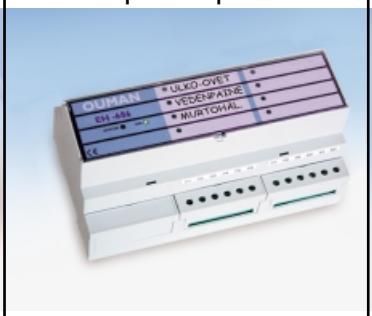
Voice box



OUMAN VB-200

VB-200 is a voice box with a plug-in. It gives oral instructions and explanations when the button is pressed. The voice box is available in different languages.

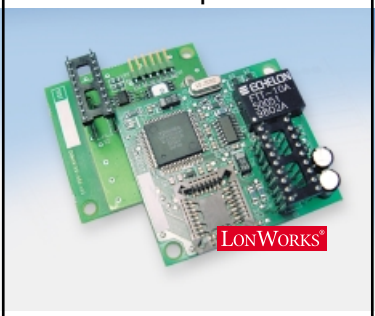
An input/output unit



OUMAN EH-686

An input/output unit that contains relays, analogue and digital inputs as well as analogue outputs. The unit makes it possible to carry out time-controlled relay functions and transfer alarms using digital inputs. EH-686 can also function as a master in the Ouman RS-485 bus by directing traffic in the net.

Channel adapter cards



OUMAN EH-485 and LON-200

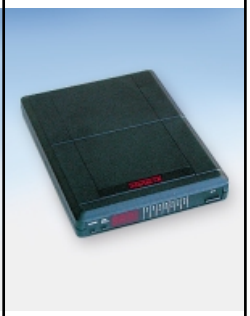
EH-485 ja LON-200 are channel adapter cards with which regulators of the EH-200 series traffic route are made to be compatible with an RS-485 or LON-field channel. The RS-485 channel is an inexpensive way to connect several Ouman regulating units to the OuNet monitor or GSM control.

GSM-modem

NOKIA 30

When a GSM modem is connected to the regulator, a GSM telephone can be used to communicate with the regulator via text messages. Then the regulator can also be wirelessly connected to the Ounet monitor.

Modem



A reliable modem which makes it possible for the regulator to be connected to the Ounet monitor via a telephone network.

We are continuously developing our products and reserve the right to make changes in our products without prior notice

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